

Considering the limitations of Claim 1, a method is recited for using a portable locator to locate at least one of a buried line and a boring tool. The locator is configured to integrally support a marking arrangement in one operating position in relation to a locating arrangement that is supported at another operating position. A position on the surface of the ground is then established using the locating arrangement relative to at least one of the boring tool and the buried line. Subsequently, the location is marked using the marking arrangement. It is noted that these limitations are not related in any general sense to improvement of ground marking accuracy. In this regard, there are a number of advantages that are provided by the claimed method, as are described by the present application, including eliminating the need for an operator to carry a separate marking device thereby freeing one hand to attend to other tasks. As another described advantage, the operator may remain standing in a substantially upright position without the need to repeatedly bend over in order to mark the ground. Relatedly, efficiency is enhanced since the operator uses the locator for locating purposes and marking purposes without the need to change body position. While any number of other advantages may at least potentially be inferred in view of the present application, it is noted that the present application does not discuss ground marking accuracy as an advantage, nor does the present application discuss inaccuracy of ground marking as a problem that is unresolved by the prior art.

Turning now to a brief discussion of one requirement in making out a proper rejection under § 103, it is well-settled in the case law that it is impermissible within the framework of 35 U.S.C. § 103 to pick and choose from a reference only so much of it as will support a conclusion of obviousness to the exclusion of other parts necessary to a full appreciation of what the reference fairly suggests to one skilled in the art. Bausch & Lomb, Inc., v. Barnes-Hind/Hydrocurve, Inc., 230 U.S.P.Q. 230, 420.

In this regard, it appears to Applicants that the Examiner is first inferring an advantage that is provided by the method embodied by Claim 1, specifically, enhanced accuracy. Thereafter, the Examiner is picking and choosing references which satisfy, or merely mention (as is the case in the instance of Marthaler), the inferred advantage, thereby suggesting that the combination of relied on prior art is reasonable based on an inferred advantage. In this regard, Applicants submit that the concept of accuracy, in some form, is inappropriately the only common ground shared by these rather disrelated references, as will be further described.

Now considering Marthaler, the background section of the patent mentions the common practice of marking the ground surface in areas suspected to contain underground utilities. The patent then mentions that errors in such marking may arise due to operator error or due to error in a location drawing (i.e., a map) when such marking is performed after the installation of the utility. The Examiner appears to have taken these portions of Marthaler in isolation to mean that Marthaler is broadly suggesting a need for more accurately marking utility lines that are already buried underground, as seen at the close of the second paragraph on page three of the Office Action.

Considering Marthaler as a whole, however, what is fairly taught by the patent is merely a spike which is installed in the ground for purposes of marking a utility at the time of installation of the utility, as is clearly described at column 1, lines 30-37 of the patent. That is, the utility line is marked with a plastic spike at installation time when the location of the utility is known. The operator error which is referred to is a misinterpretation of the map by the operator rather than some sort of error in operating a portable locator. Applicants find no teachings or disclosure in the patent which reasonably suggest the resolution of any type of error relating to a portable locator. The problem being solved by

Marthaler resides in attempting to make the marking permanent so as to resist theft, vandalism and movement due to ground moving equipment, as described at column 1, lines 37-41. The reference fails utterly with regard to any relationship to the use of a portable locator. In this regard, Marthaler teaches completely away from "after the fact" utility marking using a locating apparatus. That is, the reference teaches total avoidance of such locating by installing "permanent" markings at the time of installation of the utility. If anything is taught by Marthaler with regard to marking the ground, it is that error on behalf of a map or an operator reading the map is unresolvable where such error occurs. Accordingly, it is submitted that Marthaler provides no support, as relied on by the Examiner, for the proposed combination of references, when taken for what the patent fairly teaches as a whole. For this reason alone, Applicants respectfully request withdrawal of the § 103 rejection of Claim 1.

The Rodgers reference, on the other hand, is concerned with plotting accurate marks on the surface of the ground based on a map such as a construction plan. What the reference is teaching is essentially analogous to a printer or plotter which uses the surface of the ground as its sheet of paper. The duty of the operator is merely to move the plotting apparatus across the plotting area in some patterned manner so that the apparatus is given the opportunity to print upon the entirety of the surface. That patterned movement appears to be the only skill that is required on behalf of the operator. Thus, the plotting operation, as is exactly the case for printing on a sheet of paper, is completely responsive to the location of the print head. In support of this position, at column 4, line 16, Rodgers likens his invention to an inkjet printer. Beyond the patterned movement, the operator exercises no control in terms of when or where the apparatus makes a mark. Insofar as operator skill, any operator capable of mowing a lawn could, at least arguably, operate the apparatus. At column 4, line 20, Rodgers alludes directly to this assertion. What the patent fairly teaches, as a whole, is a plotting arrangement for marking the surface of the ground responsive to a map.

It is noted that Marthaler, in contrast to Rodgers, teaches that marking responsive to a map is inaccurate where the map contains error. It is further noted that Rodgers is completely reliant on a map in the form of a construction plan and is, therefore, equally susceptible to such error. Thus, Rodgers fails to suggest any alternative resolution to this problem, which is resolved by Marthaler in requiring installation time marking so as to avoid reliance on a map. The two references are diametrically opposed in terms of usage of maps. Applicants submit that any combination of these two references is fatally flawed for this reason standing alone.

By way of comparison, accuracy in the form of plotting or marking responsive to a map is submitted to be irrelevant in terms of the limitations embraced by the method of Claim 1. That is, the present application is unrelated (1) to producing ground marking responsive to a map, (2) to any asserted accuracy in doing so and (3) to any advantages derived therefrom. In contrast to Rodgers, Claim 1 requires using a portable locator to selectively identify the position of an underground object. The operator may then mark the surface of the ground corresponding to the identified position, using the integrally provided marking arrangement. Accordingly, the inference of accuracy in marking responsive to a map, as selected by the Examiner in isolation from the overall teachings of Rodgers, in order to make the suggested combination of references, is seen to be entirely unrelated to the present invention and the steps recited by Claim 1. For at least these reasons, Applicants submit that Rodgers is devoid of any disclosure, teachings or suggestions reasonably relating to the method limitations of Claim 1.

Turning briefly to the Peterman reference, what is fairly taught by the reference is a portable locator used for locating an underground utility by detecting an electromagnetic locating signal that is emanated from the utility. The patent asserts certain advantages, which may relate to enhanced locating accuracy associated with identifying the location of the utility, based on the operation of the locator with regard to complex issues such as, for example, amplifier gain adjustments and interference with the locating signal. The Examiner has taken this teaching, in isolation, as reasonably suggesting the combination of this reference with the remaining art of record. Applicants respectfully disagree. At this juncture, it is appropriate to note that there are any number of portable utility locating devices in the prior art and that enhanced locating accuracy should be a goal of anyone producing a portable locator. Such accuracy when Peterman is taken as a whole, however, bears no relationship to either Marthaler or Rodgers in terms of accuracy responsive to a map. Further, Applicants find no disclosure, teaching or reasonable suggestion in Peterman with regard to ground marking. Applicants remain unaware of any reference which teaches an integral ground marking device in a portable locator that is configured for identifying at least one of a boring tool and a buried utility.

In sum, when the art of record is considered as a whole, it is clear that the proposed combination, based on the concept of accuracy, is unsupported by the art of record. In view of Claim 1, the framework of this rejection takes portions of each reference in isolation, is not reasonable and is submitted to be impermissible. For all of these reasons, withdrawal of the § 103 rejection of Claim 1 on the art of record is respectfully requested. Further, Applicants submit that there are additional reasons favoring the patentability of Claim 1 over the art of record, as will be discussed immediately hereinafter.

Turning again to the requirements set forth under § 103 in terms of combining references, it is important to understand that a combination of references is proper only if there is some objective teaching in the prior art that would lead one of ordinary skill in the art to combine the relevant teachings of the references. In re Fine, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). See also In re Rhinehart, 189 U.S.P.Q. 143, 147 (CCPA 1976).

In making out the rejection of Claim 1, the Examiner states:

It would have been obvious at the time the invention was made to a person of ordinary skill in the art to utilize the apparatus taught by Peterman as the signal receiving mechanism in Rodgers. By doing so, the combined apparatus is capable of detecting utility lines and marking them with paint without errors, even when being used by an unskilled operator. This combined apparatus of Rodgers and Peterman overcomes the problems taught by Marthaler. (emphasis supplied)

Initially, as discussed above, it is noted that the present application contains no mention of eliminating errors in marking the ground, which forms the entire basis of this rejection. Moreover, the present application contains no discussion of the skill of the operator. Applicants fail to find any appropriate inference with regard to operator skill in supporting the proposed combination of references. More importantly, what is proposed in the quoted paragraph is the modification of Rodgers to include the locating apparatus of Peterman, thereby overcoming the problems taught by Marthaler. It appears that the structure of this rejection places Rodgers in the position of a primary reference rather than Marthaler, particularly since Marthaler is relied on as a reference for suggesting accuracy as basis for the proposed modification, although described above to be improper by Applicants. Assuming, as argued, that accuracy fails as the required objective teaching to support combining the references in order to meet the claimed limitations, Applicants will consider these references below in terms of what they teach in an objective sense.

Marthaler teaches that the ground can be marked in error, which error may arise from errors in a map or due to operator error. No resolution of the error, in either form, is taught other than marking the ground at the time of installation of the utility using a "permanent" ground marking stake. The corollary teaching is that ground marking using a portable locator is to be avoided. In this regard, it is submitted that Marthaler could teach no more absolutely away from the present invention. Accordingly, Applicants submit that Marthaler lends nothing in terms of an objective teaching to a rejection of Claim 1 under § 103 on the art of record. Mathaler contains no teaching relating to portable locating apparatus, let alone to combining such, in any form, with ground marking apparatus. Marthaler, in fact, teaches directly away from the use of portable locators. Clearly, Applicants would have no motivation to modify Rodgers in the suggested manner in view of Marthaler.

Assuming, as Applicants believe, that Marthaler is wholly ineffective in supporting the proposed combination, Applicants will now address the remaining art of record in terms of some objective teaching to support combining the references. Beginning with Rodgers, viewed in the light of a primary reference, what is taught by Rodgers is a ground plotting apparatus having a marking arrangement that is location sensitive within the plotting region. Applicants submit that Rodgers is completely devoid of any reasonable teaching, disclosure or suggestion relating to modification of the system to incorporate a portable locator that is directed to locating underground objects.

Turning to Peterman, what is taught by this reference is a portable locator configured for locating an underground utility. Applicants find no objective teaching in Peterman reasonably relating to modification of a plotting system to include a utility locating apparatus. Accordingly, Applicants would have no motivation provided by either Peterman, nor Rodgers itself, to modify Rodgers in the proposed manner. The mere fact that Peterman teaches a locating apparatus is irrelevant in the absence of some objective teaching which at least suggests the combination. For these reasons, it is submitted that Peterman contributes nothing to the proposed combination of references. In sum, Applicants submit that the art of record is devoid of an objective teaching to combine the references as suggested. Accordingly, allowance of Claim 1 is respectfully requested for this reason standing alone.

Still another reason is considered to favor patentability of Claim 1 over the art of record. Specifically, it is not clear to Applicants that the combination of Rodgers and Peterman could result in an operable method, notwithstanding Applicants' position that the proposed combination is improper at its outset. The physical incorporation and modification of a location sensitive plotting apparatus to include a portable utility locator is nontrivial, at the least, presenting a myriad of problems to the modifying party. Moreover, even if combined in the manner proposed by the Examiner, the resulting method will not necessarily realize the advantages or benefits of the claimed invention. Accordingly, for these reasons standing alone, Applicants respectfully request allowance of Claim 1 over the art of record.

Dependent Claims 2-14 and 17-19 are each either directly or indirectly dependent from and therefore include the limitations of Claim 1. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 1. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 1, further distinguish the claimed invention from the art of record.

For example, Claim 2 requires that the surface of the ground is marked using aerosol paint, while Claim 3 recites the step of configuring the marking arrangement to accept a replaceable canister of aerosol paint. It is submitted that the mere disclosure by Rodgers of a marking arrangement, as part of a plotting system, fails to teach, disclose or reasonably suggest a method using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool in the absence of any objective teaching to do so.

As another example, Claim 4 recites the step of configuring the marking arrangement such that an operator of the portable locator, in a generally upright position, locates using the locating arrangement and marks the surface of the ground using the marking arrangement. Claim 5 recites that the marking arrangement is configured for finger actuation by the operator while Claim 6 recites configuring the marking arrangement for foot actuation by the operator. Applicants find no teaching in Rodgers of such steps nor any objective teaching in the art of record, in any reasonable combination, which would reasonably lend support to such modifications.

As still another example, Claim 7 depends directly from Claim 5 thereby applying aerosol paint through the step of finger actuation while Claim 8 depends directly from Claim 6 thereby applying aerosol paint through the step of foot actuation. Applicants are unable to find any disclosure of such a method nor an objective teaching of such in the art of record, in any reasonable combination, relating to using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool.

As a further example, Claim 9 depends directly from Claim 1 and includes the step of configuring the marking arrangement for marking the surface of the ground using aerosol paint contained in a replaceable canister and further includes the step of providing an electrical actuation arrangement for causing emission of the aerosol paint from the canister in response to a finger actuation by an operator. Applicants are unable to find any disclosure of such a combination nor an objective teaching of this combination of limitations in the art of record, in any reasonable combination, relating to using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool.

Claim 10 depends from Claim 9, requiring that the step of providing the electrical actuation arrangement includes the step of using a solenoid to cause emission of the aerosol paint. Claim 11 adds the step wherein the solenoid causes movement of its plunger which movement produces emission of the paint from the canister. Claim 12 still further recites the steps of connecting the plunger of the solenoid with a lever and arranging the lever proximate to the canister so that movement of the plunger causes the lever to engage the canister to emit the aerosol paint. Applicants are unable to find any disclosure of such a combination nor an objective teaching of this combination of limitations in the art of record, reasonably relating to using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool.

Claim 13 depends directly from Claim 10 further including the steps of interfacing the solenoid with an electronics package and interfacing the electronics package with a push button switch such that the electronics package electrically actuates the solenoid responsive to the operator engaging the push button switch. Applicants are unable to find any disclosure of such a combination nor an objective teaching of this combination of limitations in the art of

record, reasonably relating to using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool.

Claim 14 depends directly from Claim 12 further including the step of housing a battery pack in the portable locator and powering the solenoid and the electronics package from the battery pack. Applicants are unable to find any disclosure of such a combination nor an objective teaching of this combination of limitations in the art of record, reasonably relating to using such an arrangement in a portable locator that is configured for locating at least one of an underground utility and a boring tool.

Claim 17 depends directly from Claim 1 and includes the steps of electronically monitoring operator actuations of the portable locator to detect a predetermined operator actuation for use in controlling the marking arrangement, to detect other operator actuations for use in controlling the locating arrangement, and to, upon detecting the predetermined operator actuation, initiate marking by the marking arrangement. The Examiner asserts an LCD screen of Rodgers as embodying such functionality. Applicants disagree at least for the reason that a display screen is incapable of doing anything other than displaying. Further, Applicants are unable to find any teaching or disclosure in the art of record, reasonably combined, which suggests such highly advantageous dual control functionality whereby operator interactions for operating the marking arrangement are distinguished from operator interactions that relate to locating. In the regard, Applicants submit that such modifications are neither trivial nor obvious.

Claim 18 expands the dual control functionality by electronically monitoring a single switch for operator interactions.

In Claim 19, the predetermined operator interaction is specifically defined. Accordingly, for all of the foregoing reasons, allowance of Claims 2-14 and 17-19 is respectfully requested.

Claim 15 is an independent claim which, like Claim 1 is directed to a method for using a portable locator that, in this instance, is configured for locating relative to a position beneath the surface of the ground. The portable locator is further configured to include a marking arrangement including a canister for emitting an aerosol paint to mark the surface of the ground. An electronics package within the portable locator is interfaced to (i) a push button switch located for finger actuation by an operator with the operator standing in an upright position holding the portable locator and to (ii) a solenoid having a plunger. A battery back in the portable locator is used for providing power to the electronics package and the solenoid such that actuation of the push button switch causes the electronics package to electrically drive the solenoid thereby moving the plunger of the solenoid. The plunger of the solenoid is connected with a lever arranged proximate to the canister such that movement of the plunger, as a result of the electronics package driving the solenoid, engages the lever with the canister resulting in emission of the aerosol paint.

Applicants note that Claim 15 shares a number of detailed limitations with Claim 1. In particular, the portable locators of both claims are configured for underground locating. Further, the portable locator of Claim 15 is configured to include a ground marking arrangement. Moreover, Applicants submit that the steps comprising Claim 1 are devoid of any reference to ground marking accuracy, operator skill or any inference reasonably related thereto. Claim 15, like Claim 1, is not directed to improved accuracy in ground marking, but to a portable locator configured for underground

locating and further configured with a ground marking arrangement. For at least these reasons, it is submitted that the arguments made above supporting the patentability of Claim 1 over the art of record are equally applicable with respect to the patentability of Claim 15. Accordingly, allowance of Claim 15 is respectfully requested.

Still considering the patentability of Claim 15, the Examiner asserts that the art of record discloses additional limitations recited by Claim 1, with reference to Claims 2-14. Applicants disagree at least for the reasons set forth with respect to the patentability of Claims 2-14 above, since these arguments are equally applicable with respect to corresponding limitations that are present in Claim 15.

Claim 20 is an independent claim which shares a number of detailed limitations with Claim 1. In particular, the portable locators of both claims are configured for underground locating. Further, the portable locator of Claim 20 is configured to include a ground marking arrangement wherein the locating arrangement is supported at a first operating position within a housing and the marking arrangement is supported at a second operating position in the housing. Moreover, Applicants submit that the steps comprising Claim 1 are devoid of any reference to ground marking accuracy, operator skill or any inference reasonably related thereto. Claim 20, like Claim 1, is not directed to improved accuracy in ground marking, but to a portable locator configured for underground locating and further configured with a ground marking arrangement. For at least these reasons, it is submitted that the arguments made above supporting the patentability of Claim 1 over the art of record are equally applicable with respect to the patentability of Claim 20. Accordingly, allowance of Claim 20 is respectfully requested.

Moreover, Claim 20 adds the limitation that the locating arrangement and the ground marking arrangement in the first and second operating positions, respectively, cooperate for use by an operator in identifying a location on the surface of the ground relative to at least one of a buried line and a boring tool and in marking the location, so as to still further favor the patentability of Claim 20 over the art of record.

Dependent Claims 21-30 are each either directly or indirectly dependent from and therefore include the limitations of Claim 20. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 20. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 20, further distinguish the claimed invention from the art of record.

For example, Claim 21 recites that the step of configuring the housing arrangement includes the steps of forming a first housing portion and a second housing portion, positioning the locating arrangement within the first housing portion, and positioning the ground marking arrangement within the second housing portion. Applicants submit that the art of record fails to disclose a housing including first and second housing portions supporting the locating arrangement and the marking arrangement, respectively, in any reasonable combination.

As another example, Claim 22 further includes the step of hinging the first housing portion to the second housing portion for movement of the first and second housing portions between an operational configuration for use by the operator and a compact configuration for at least one of transport and storage. Applicants submit that the art of record is devoid of such a teaching in any reasonable combination. For example, it is clear that Rodgers fails to provide such a

housing as asserted by the Examiner. What Rodgers provides is merely a folding handle in the manner of a lawn mowing apparatus, as is clearly shown in Figure 2 of the patent.

With respect to Claims 23-30, the Examiner asserts that similar limitations have been addressed above, purportedly with respect to Claims 2-14 and 17-19. Applicants respectfully disagree and assert the arguments made above in behalf of the patentability of Claims 2-14 and 17-19 with respect to corresponding limitations.

Claim 31 is an independent claim that is directed to a method for fabricating a portable device including the steps of configuring a housing arrangement to support a locating arrangement and a marking arrangement and arranging an electronics package for monitoring operator actuations of the portable device (i) to detect a predetermined operator actuation for use in controlling the marking arrangement, (ii) to detect other operator actuations for use in controlling the locating arrangement, and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the marking arrangement. The Examiner rejects this claim on the assertion that all of these limitations have previously been addressed. Applicants respectfully disagree. Initially, it is noted that the premised combination of prior art under which this rejection is based has been argued as improper for the reasons given above. Moreover, even if this combination were reasonable, Applicants find no teaching or disclosure in any reasonable combination of steps (i)-(iii) in the art of record. For all of these reasons, allowance of Claim 31 over the art of record is respectfully requested.

Dependent Claims 32 and 33 are each directly dependent from and therefore include the limitations of Claim 31. Accordingly, it is respectfully submitted that Claims 32 and 33 are also patentable over the art of record for at least the reasons set forth above with respect to Claim 31. Further, these dependent claims place additional limitations on Claim 31 which, when considered in its light, further distinguish the claimed invention from the art of record. In particular, Applicants are unable to find any teaching or disclosure in the art of record, in any reasonable combination, describing the step of arranging an electronics package to monitor a switch for a predetermined actuation, as defined, and then electrically initiating marking by the marking arrangement responsive to the predetermined operator actuation detected by electronic monitoring.

Claim 34 is an independent claim that is directed to a method for manufacturing a portable device wherein a housing arrangement is provided which supports a locating arrangement in one operational orientation for locating at least one of a buried line and a boring tool and which further supports a ground marking arrangement in another operational orientation such that the locating arrangement and the ground marking arrangement cooperate for use by an operator in identifying a location on the surface of the ground relative to at least one of the buried line and the boring tool and in marking the location with the locating arrangement. The Examiner rejects this claim on the assertion that the all of these limitations have previously been addressed. Applicants respectfully disagree. It is again noted that the premised combination of prior art under which this rejection is based has been argued as improper for the reasons given above. Moreover, even if this combination were reasonable, Applicants find no teaching or disclosure, in any reasonable combination, of a portable locating device which is configured consistent with these steps as a whole. For all of these reasons, allowance of Claim 33 over the art of record is respectfully requested.

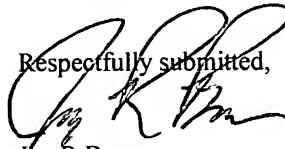
Dependent Claims 35-37 are each either directly or indirectly dependent from and therefore include the limitations of Claim 34. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art

of record for at least the reasons set forth above with respect to Claim 34. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 34, further distinguish the claimed invention from the art of record. Inasmuch as Claims 35-37 reflect additional limitations as seen in Claims 17-19, Applicants submit that these claims are patentable over the art of record standing on their own at least for the reasons given above for each of Claims 17-19, respectively, standing on their own.

For all of the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, Applicants respectfully request allowance of the claims under immediate consideration, and passage to issue of the application are solicited.

Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the Examiner is requested to contact Mike Pritzkau at 303-410-9254.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jay R Beyer", is written over the typed name.

Jay R Beyer
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Supplement A

Marked up version of Replacement Paragraphs

A marked up version of each of the amended paragraphs follows immediately hereinafter.

¶3 Portable locators have become popular, for example, as part of locating arrangements used with underground horizontal boring equipment. In particular, hand held portable locators enable tracking of a boring tool which is configured for emitting a locating field from the position of the boring tool beneath the surface of the ground. As examples of state of the art locating systems which incorporate portable walk over locators see U.S. Patent No. [4,347,380] 4,387,380 entitled APPARATUS FOR DETERMINING THE DISTANCE TO A CONCEALED OBJECT WHICH IS RADIATING AN ALTERNATING CURRENT SIGNAL (hereinafter the '380 patent) and U.S. Patent No. 5,633,589 entitled DEVICE AND METHOD FOR LOCATING AN INGROUND OBJECT AND A HOUSING FORMING PART OF SAID DEVICE (hereinafter the '589 patent). It is noted that the latter patent is commonly assigned with the present application.

¶25 Referring to Figures 1-4, having described several implementations of the ground marking locator arrangement of the present invention, it is now appropriate to discuss its advantages. It should first be appreciated that an operator of the locator of the present invention is able to mark the ground without the need to carry a separate marking device. In the instance of locator 10, the operator simply depresses pedal end 62 of spray lever 60 while, in the instance of locator 100, the operator simply actuates switch 25 in a predetermined way. In either case, a mark is formed on the ground while the operator's other hand remains free to perform other tasks such as, for example, operating a walkie-talkie. At the same time, it should be appreciated that, when using either implementation, the operator may remain standing in a substantially upright position without the need to repeatedly bend over in order to mark the ground. In other words, the operator is able to mark the ground while holding the locator in substantially the same manner as the locator is held for locating purposes. For these reasons alone, the present invention is submitted to be highly advantageous. The ground marking portable locator of the present invention has not been seen heretofore by Applicants and is thought to [significantly] be a significant enhancement in the field. As one example, in systems using a portable locator for tracking the underground progress of a boring tool, an operator may efficiently mark the path of the boring tool on the ground surface without the need frequently change body positions and while one hand remains free to attend to other tasks.